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ABSTRACT

There is a misconception in the research literature that low income students from underrepresented minority groups need special educational programs to be successful in a competitive society. This study investigated the performance of Pacific and Asian students in a traditional academic environment, The Lab School in Hawaii, where they were given clear expectations concerning their participation and performance and few academic options. The study focused on how at-risk students performed on the Scholastic Aptitude Test (SAT). Scores were compared among ethnic groups and with those of Caucasian students in the same school. Significant differences were found between ethnic groups and between socioeconomic classes. Sex was a factor in grade point average where females were significantly higher than males. Korean students outperformed others on the SAT. Even students who performed at low levels within their courses went on to college after graduation. This was thought to be due to the exposure they received to an academic curriculum and those content areas required for college. Also their confidence was boosted from the knowledge that they had completed a rigorous program. There was no evidence that high ability students were negatively impacted by integrating lower ability students in the school. Tables and a list of references are included. (VM)

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# PERFORMANCE OF EDUCATIONALLY-AT-RISK PACIFIC AND ASIAN STUDENTS IN A TRADITIONAL ACADEMIC PROGRAM

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The purpose of this study was to investigate the performance of Pacific and Asian students in a traditional, academic environment when given clear expectations concerning their participation and performance. The study focused on how these students, particularly those classified as "at risk" with average or below average standardized test scores, performed on traditional measures of academic achievement when compared to students with stronger academic backgrounds. The study specifically looked at a cross section of students representing all ability groups.

There is a misconception often found by implication in the research literature that students from under-represented minority groups and students from low socio-economic status groups need special educational programs and different educational programs to be successful in a competitive society. Kitano (1980) provided an excellent overview of cultural characteristics of Asian American children that could facilitate or hinder their performance in school. She points out that two opposing teaching approaches have been suggested in the literature to deal with discrepancies between the child's culture and that of the school. Basically we can change the child to conform to the school's demands or we can alter the teaching practices to meet the child's needs. For example, a considerable amount of research conducted at Kamehameha Schools/Bishop Estate in the Kamehameha Elementary Education Program (KEEP) has been based on the premise that Polynesian students, predominantly those of Hawaiian descent, require far more emphasis on verbal skill learning and learn more appropriately in a group setting where the individual is not forced to compete with others for grades or attention (Jordan, 1981). Some of these studies have indicated that students learning in special programs that enhance verbal skills and group oriented interaction appear to improve in test score performance (Brandon, 1988). However, there are very few longitudinal studies looking at the performance of these students once they are forced into a more competitive, academic environment.

One area that researchers have failed to look at has been the consequence of forcing students regardless of ethnic and socio-economic background into traditional, academic programs where competition is expected and where students are held accountable for their own behavior and performance. Such programs are far more representative of traditional American values and traditional American schools. The question is, are such traditional, academic programs supportive of or detrimental to the academic development of Pacific and Asian students, particularly those subgroups typically viewed as educationally-at-risk?

According to Sue (1981), the lower verbal performance of Asian Americans tends to be maintained and perpetuated by stereotypes. These stereotypes are reinforced by having well-meaning educators

channel Asian American students into courses that minimize English and maximize mathematical skills.

Simpson (1981) argues that performance inequality across ethnic groups is often the result of unidimensional classroom structures. Multidimensional classrooms where teachers used multiple methods and more diversity in instruction resulted in better classroom performance among minority students.

In this study, selected data from a controlled laboratory school were analyzed to try and determine the impact of a traditional academic curricula on students classified at-risk. At the current time in the State of Hawaii, students from the Hawaiian, Filipino, and Samoan ethnic groups are considered academically at risk because of poor academic performance in public schools.

## Methods

The research for this study was conducted at the University of Hawaii Laboratory School (Lab School). The school enrolls children K-12 and is part of the Curriculum Research and Development Group in the College of Education.

The curriculum provided at the Lab School is a comprehensive, academic college preparatory curriculum. Electives are provided in art and culture classes. Everything else in the curriculum is fixed, forcing all students to complete a demanding curriculum including four years of English, Science, Social Studies, mathematics, art, music, and three years of foreign language. The philosophy of the Lab School is compatible with Adler's (1982) as stated in the Paideia Proposal. The school recruits a cross section of students representing all ethnic, racial, and ability groups. The faculty then provide all students the same demanding academic curriculum. Unlike most laboratory schools affiliated with universities, the Lab School is designed to do curriculum product development and research, and is not used for teacher education. Because of the extensive data collection on all students, it is possible to match students by ethnic group, socio-economic status, and achievement test scores.

The subjects for this study were students (N=632) who attended the Lab School with a date of graduation of 1975 through 1986. The Lab School attempts to enroll a cross section of ethnic and socio-economic groups in order to conduct research studies on a population that is representative of the State.

Up until 1975, entry into the school was selective with a large number of middle class students enrolled. Starting in 1975, entry into the school was based on obtaining a cross section of

students to represent the socio-economic and ethnic groups represented in the public schools.

The data files on subjects in this study were developed by an examination of the academic records of all students who attended the Lab School, graduating between 1975 and 1986. Complete data files were available on 490 students who served as the subjects for this study. The academic performance and aptitude data included the Stanford Achievement Test series (Harcourt Brace Jovanovich, 1973a, 1973b, 1973c) administered in grades 2, 4, 6, 8, and 10, the student's grade point ratio for each semester in grades 8 through 12, and the Scholastic Aptitude Test administered in grade 12. GPA data were not available for for all years for all graduating classes. GPA data were available only on grade 12 for 1975 students, on grades 11 and 12 for 1976 graduates, and on 10, 11, and 12 for 1977 graduates. All others had four years of GPA data. Demographic data included the student's ethnic background; socio-economic status, sex, and date of entry into the program. The following ethnic backgrounds were encountered in the sample: Caucasian (N=93), Chinese (N=35), Hawaiian (includes Part-Hawaiian students) (N=74), Japanese (N=137), Korean (N=12), Mixed (N=79), Filipino (N=26), Samoan (N=16), and Other (N=18).

## Data Analysis

The selected data were analyzed by regression analysis with significance set at the .001 level using the general linear models procedures on SAS. In addition, a correlational matrix was formed to identify highly correlated variables. Comparisons were made by ethnic group across the twelve years of data. The performance of each ethnic group was individually analyzed across the same period of time.

## Results

Looking at the data across the years, it becomes clear that significant differences on each of the dependent variables reported are accounted for primarily by the ethnicity of the student and the socio-econmomic status of the student's parent or guardian (See Table 1). Socioeconomic status was significantly correlated with every variable ($p < .0001$) except sex where there was no significant correlation. These data are consistent with other data reflecting on significant differences among various ethnic groups on dependent measures, particularly those measuring verbal and quantitative skills. The only item on which sex appears to be a factor was GPA. Females had significantly higher GPAs ($p < .001$) than males.

On the Scholastic Aptitude Test (SAT), verbal portion, Koreans had the highest mean score followed by Caucasian, Japanese, Filipino, and Hawaiian students (See Table 2). In Figure 1 (Koreans were not included because of the small n=12), it can be seen that the data remains fairly constant since 1975 with some fluctuations occurring, particularly in 1981 where Japanese outperformed Caucasians, and in 1984 where there is very little difference between the performance of Filipino and Japanese students. One interesting notation on the data concerning the verbal scores of students has been the performance of Samoan students which has fluctuated considerably since they were first tracked beginning in 1982 as a separate ethnic group. The problem with the data on the Samoan students is the small number in the Lab School; however, the recent performance of the students indicates that they have been improving in standardized test performance since entering the school program. The beginning stanines are based on the scores from the Stanford Achievement Tests. Most scores as expected are around the average. Only the Hawaiian and Samoan students are below the average on verbal skills. Many of the Hawaiian students have difficulties on the verbal portion of standardized tests because often only Hawaiian Creole English is spoken in the communities and homes. Many of the Samoan students enter the Lab School unable to speak English. A majority of students in the mixed category are from the dominant groups of Caucasian and Japanese. Students classified as other are from one of the Micronesian or Polynesian groups.

Looking at the SAT, quantitative portion (see Figure 2), Korean students outperformed all other groups but due to the small n=12 were not graphed in Figure 2. In Figure 2, the Japanese students outperformed other ethnic groups, although this has not been consistent over time. During the last three years, there were virtually no significant differences among Japanese, Filipino, or Caucasian students on the math portion of the test. Hawaiian students, although significantly below the means of the other ethnic groups, have been improving in their test scores as noted in a study by Brandon (1988).

The data on the Lab School are of particular interest when one looks at the performance of different ethnic groups over time. The student cohorts graduating in 1975, 1976, and 1977 represented students who were brought into the Lab School mostly from middle income, middle class families. Starting in 1975, students were more rigidly selected on the basis of State norms by ethnic group and socio-economic status to reflect the student population in the State's public schools. When one looks at the performance of a cross-section of students, including those with low achievement and aptitude scores, there appears to be little significant difference between a middle income student body and a more representative student body on the basis of SAT data.

However, the data also clearly show that the entry level verbal and quantitative skills students have are the best predictors of future SAT performance (See Table 3).

Although one might assume that increasing the number of educationally at-risk students in the high school population would significantly decrease the performance of students, the data do not reflect this assumption. This can certainly be seen among the Caucasian and Japanese students who are performing at approximately the same levels as a more select body of students back in the late '70s.

Conclusions

In looking at the data over a ten-year period, it seems reasonable to assume that having students complete an academic curriculum with few options may be a more appropriate educational alternative than many individuals have assumed. By completing a comprehensive academic curriculum, students who perform even at low levels within the courses they are taking have the opportunity to be exposed to content areas necessary for higher education. They are also being exposed to the value system of students who intend to go on to higher education. There appears to be a self fulfilling prophecy working among the students themselves with a high percentage pursuing higher education at either community or four-year colleges. In the graduating class, 1986, 85 percent of the students graduating went either to community colleges or four-year colleges and universities. Perhaps one of the strongest arguments for having students complete an academic program is the background it provides the student who has no desire to enter college. By having the appropriate background and by being exposed to academic coursework of depth and breadth, the student will be more likely to have the necessary credentials for entry into a community college environment or a four-year college at a later date.

The positive results achieved in the Lab School can be due to a variety of reasons. The smallness of the school itself allows the individual student to be known by teachers and to have a close relationship with peers of all grade levels. The fact that all students are treated alike means that there is no differentiation of students on the basis of tested ability, and therefore students are not given the negative feedback which would be expected in a school situation where tracking takes place. High expectations are provided for all students. All students are encouraged to think of higher education as a real and viable alternative upon completion of high school. Similar results to those attained at the Lab School were reported by Malmberg (1983) in a case study looking at the establishment of a

rural community based school working with a native American minority student population. He showed that alienated youths, when given the opportunity and support, tend to show significant growth in academics and in social rehabilitation when placed in an alternative high school stressing basic academic skills.

The influence on a student's self concept cannot be dismissed. Students completing an academic track not only are exposed to the content area normally completed by most students in a college preparatory program, but they are also aware of the fact that they themselves have completed a demanding academic program. The fact that these students were able to complete an academic program even if their course grades were marginal versus the bright student who may have an A and B record has to give them a better feeling about themselves in knowing that they have completed a rigorous curriculum and have not been placed in a less demanding curriculum designed to promote success at the expense of academic rigor.

Another way to interpret the data over the ten-year period is to look at the impact mixing lower ability students has had on higher ability students. There is no indication that higher ability students are negatively impacted by integrating lower ability students in the school. Student performance, particularly for Caucasian and Japanese students, has remained relatively constant across the years and there appears to be no significant lowering of student achievement standards as a result of having a range of socio-economic and ethnic groups within the school.

Additional follow-up studies will be conducted with the students who have graduated from the Lab School. Future follow-ups will include an analysis of their current socio-economic status as well as educational attainment after having left the Lab School.

In the future, analysis of ethnic data in Hawaii may not be possible. Last year, sixty percent of all births registered in the State were classified as mixed race.

TABLE 1
The relationship of ethnicity and socioeconomic status to verbal and quantitative scores on the scholastic aptitude test

SAT Verbal

| Source | DF | Type I SS | F Value | PR < F |
|---|---|---|---|---|
| Ethnicity | 9 | 12365.92 | 12.41 | .0001 |
| SES | 4 | 5701.25 | 12.87 | .0001 |

SAT Quantitative

| Source | DF | Type I SS | F Value | PR < F |
|---|---|---|---|---|
| Ethnicity | 9 | 11425.64 | 11.41 | .0001 |
| SES | 4 | 2282.71 | 5.13 | .0005 |

TABLE 2
Entry verbal and quantitative stanines (stanford achievement tests), exit verbal and quantitative scores on the scholastic aptitude test, and grade point average for each ethnic group

| Ethnicity | Entry Stanines | SAT | GPA |
|---|---|---|---|
| Caucasian | V 6.68 | 451 | 3.18 |
| | Q 6.44 (96) | 505 (103) | |
| Japanese | V 6.74 | 429 | 3.26 |
| | Q 6.99 (153) | 522 (155) | |
| Hawaiian | V 4.93 | 333 | 2.88 |
| | Q 5.27 (99) | 410 (88) | |
| Filipino | V 5.82 | 377 | 3.10 |
| | Q 6.48 (29) | 474 (28) | |
| Chinese | V 6.50 | 432 | 3.21 |
| | Q 6.68 (32) | 525 (35) | |
| Samoan | V 3.44 | 283 | 2.59 |
| | Q 4.16 (18) | 343 (16) | |
| Korean | V 6.25 | 474 | 3.56 |
| | Q 6.58 (12) | 557 (12) | |
| Mix | V 6.17 | 418 | 3.06 |
| | Q 6.35 (105) | 482 (93) | |
| Other | V 4.89 | 341 | 3.02 |
| | Q 6.11 (9) | 448 (16) | |
| Black | V 5.17 | 320 | 2.63 |
| | Q 6.17 (6) | 386 (5) | |

TABLE 3
The impact of entry level verbal ability and mathematics ability, ethnicity, and entry date on scholastic aptitude test verbal and quantitative scores

For SAT Verbal

| Source | DF | Type I SS | F Value | PR < F |
|---|---|---|---|---|
| Beginning Verbal | 1 | 38884.76 | 692.57 | .001 |
| Year Entered | 15 | 1674.93 | 1.99 | .014 |
| Ethnic Group | 9 | 1404.62 | 2.78 | .0035 |

For SAT Quantitative

| Source | DF | Type I SS | F Value | PR < F |
|---|---|---|---|---|
| Beginning Quantitative | 1 | 26389.84 | 353.67 | .001 |
| Year Entered | 15 | 1226.11 | 1.10 | .35 |
| Ethnic Group | 9 | 2891.38 | 4.31 | .001 |

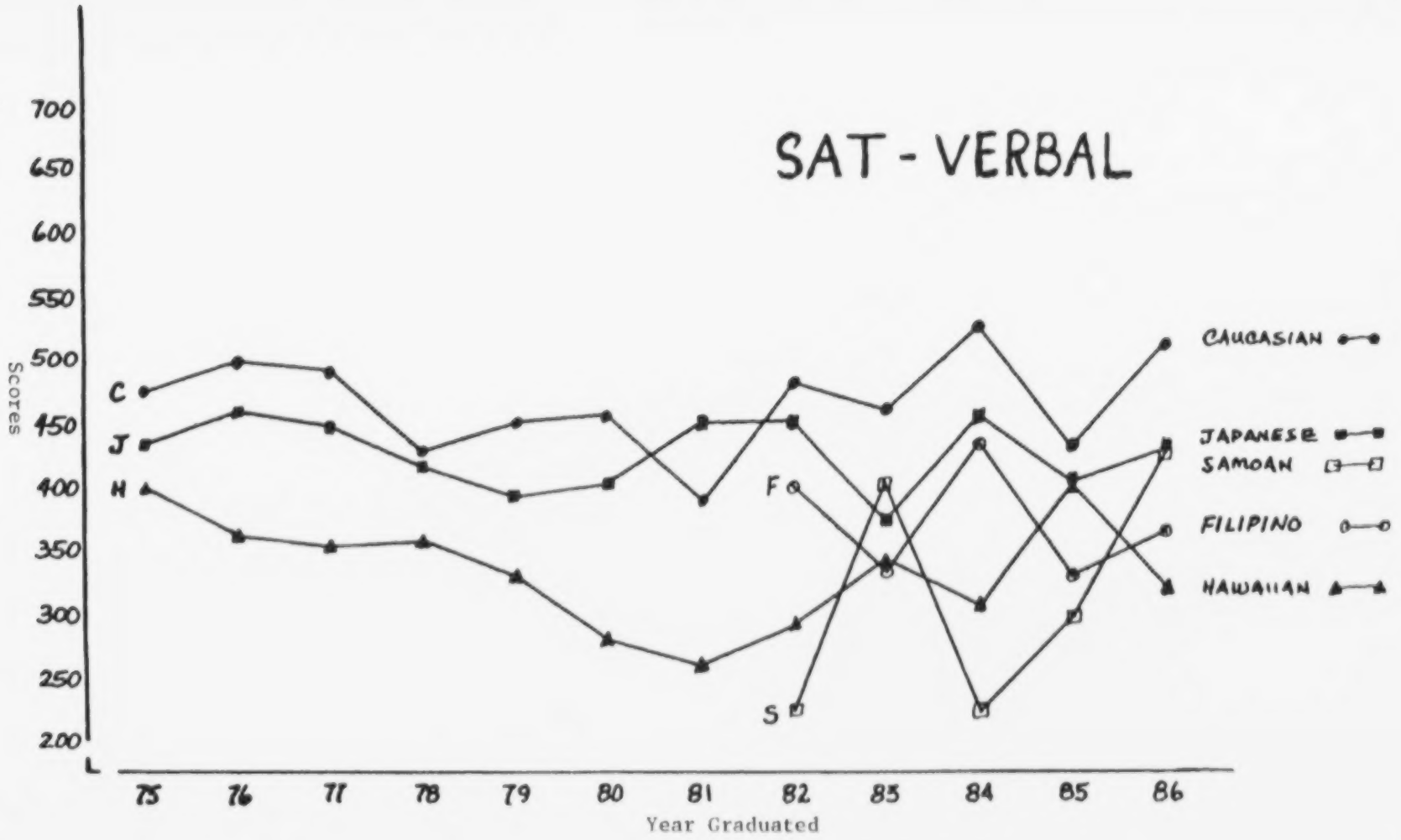


FIGURE 1. Mean scores on the verbal portion of the Scholastic Aptitude Test across graduating classes for each ethnic group.

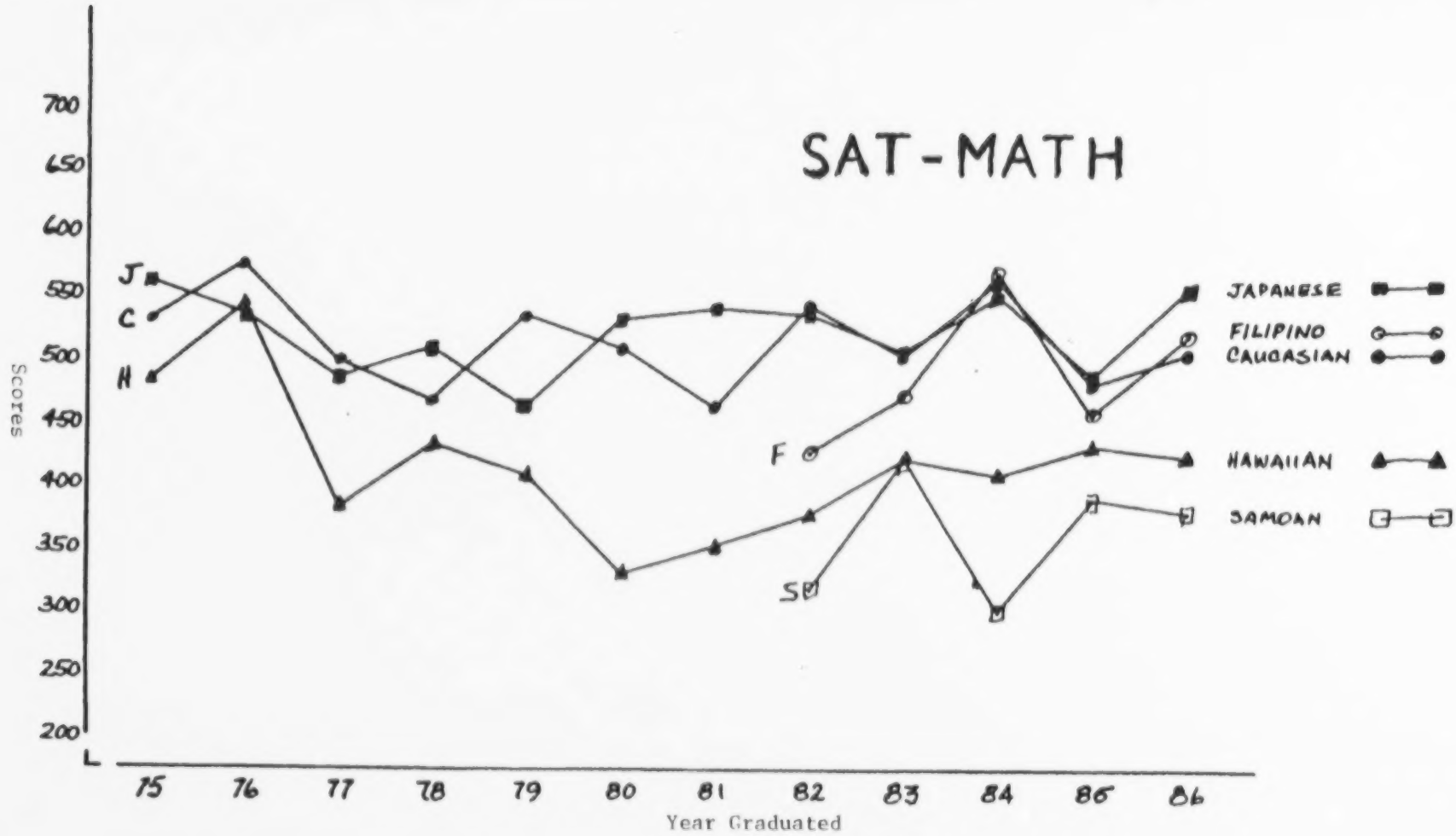


FIGURE 2. Mean scores on the quantitative portion of the Scholastic Aptitude Test across graduating classes for each ethnic group.

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